Undescribed Species of Crane-Flies from the Western United States and Canada (Dipt.: Tipulidae). Part XVII

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The preceding part under this general title was published in Entomological News, 67: 210–216, 1956. The new species discussed herewith were collected by the writer in California, Colorado and Montana, representing part of the novelties discovered in the course of the comprehensive survey of Western North American Tipulidae. Types of the species are incorporated in the Alexander Collection of Crane-flies.

Limonia (Dicranomyia) homichlophila new species

Allied to *pudica;* size relatively small (wing about 6 mm.); general coloration of entire body pale yellow; wings subhyaline, stigma barely indicated; ovipositor with cerci very slender; male hypopygium with posterior border of tergite very feebly emarginate; ventromesal lobe of basistyle without an accessory lobule; ventral dististyle with the rostral prolongation relatively short, the subacute apex simple; rostral spines placed close together on small subequal basal tubercles.

♂. Length about 4.5–4.8 mm.; wing 5.3–6 mm.; antenna about 0.8–0.9 mm.

♀. Length about 6.5 mm.; wing 6 mm.

Rostrum yellow, light gray pruinose; palpi light brown. Antennae with scape and pedicel obscure yellow to brownish yellow, flagellum yellowish brown to brownish black; flagellar

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segments short-oval to oval, slightly exceeding the verticils. Head obscure yellow, with a whitish bloom; anterior vertex relatively broad, about one and one-half times the diameter of the scape.

Thorax uniformly pale yellow, without pattern. Halteres yellow, knobs weakly darkened. Legs with the coxae and trochanters pale yellow; remainder of legs obscure yellow, terminal tarsal segments infuscated; claws with a single strong outer tooth and a few weak more basal denticles. Wings subhyaline, stigma barely indicated; veins brownish yellow to very light brown. Venation: Sc_1 ending approximately opposite the origin of *Rs*, in cases shortly beyond, Sc_2 slightly removed, about opposite this origin; free tip of Sc_2 and R_2 in transverse alignment; cell *1st* M_2 subrectangular, about equal in length to the distal section of vein M_3; *m–cu* at or close to fork of *M*.

Abdomen obscure yellow to brownish yellow, sternites clearer. Ovipositor with the cerci very slender, gently upcurved, tips acute. Male hypopygium with the ninth tergite narrowly transverse, the posterior border very feebly emarginate, cephalic margin nearly straight; setae relatively few. Ninth sternite semioval, its setae long and conspicuous. Basistyle smaller in area than the ventral dististyle; ventromesal lobe simple, obtuse, without an accessory basal lobule. Dorsal dististyle gently curved, the apex suddenly narrowed into a spine, the base not dilated. Ventral dististyle with the rostral prolongation markedly shorter than in *pudica,* blackened, the tip subacute, simple; rostral spines relatively conspicuous, about equal in length to the rostrum beyond their insertion, placed close together on small subequal tubercles. Gonapophysis with the mesal-apical lobe a relatively slender blackened spine, its tip acute.

Habitat. CALIFORNIA. *Holotype:* ♂, Vernal Falls of the Merced River, Yosemite National Park, 5,000 feet, July 1, 1957 (C. P. Alexander). *Allotopotype:* ♀, pinned with the type. *Paratopotypes:* 8 ♂♀.

The most similar species is *Limonia* (*Dicranomyia*) *pudica* (Osten Sacken) which differs most evidently in the details of structure of the male hypopygium. The present fly was found

on the wet rocks and in the constant spray of Vernal Falls, near the base, and on the south side of the stream. Here it was associated with abundant specimens of *Elliptera clausa* Osten Sacken. It may be noted that this spot is the exact type locality for the *Elliptera,* where the species was found by Osten Sacken on June 11, 1876.* The habitat, in the eternal spray of the falls, has suggested the specific name of the present fly (to love mist).

Pedicia (Pedicia) lewisiana new species

Allied to *parvicellula* and *subobtusa;* wing pattern pale brown, seam on vein *Cu* narrow, ending at *m–cu*; male hypopygium with the tergal lobes broadly obtuse at tips; basistyle with outer apical angle produced into a short stout spine.

♂. Length about 20–21 mm.; wing 19–20 mm.

Rostrum and head brownish gray, the latter clearer gray behind; palpi dark brown. Antennae relatively short, almost uniformly yellowish brown to light brown.

Pronotum obscure brownish yellow, narrowly dark brown on sides, the color continued onto the dorsopleural membrane to form an inconspicuous stripe. Mesonotal praescutum light gray, with four brown stripes, the intermediate pair separated by a narrow ground line that widens on posterior half; scutellum chiefly yellow; postnotum variegated brownish gray and obscure yellow. Pleura pale yellow, the sternopleurite slightly darker. Halteres with stem whitened, knob weakly darkened, the apex somewhat paler. Legs with the coxae light gray; trochanters yellow; femora brownish yellow, the tips gradually brownish black; tibiae yellow, tips more narrowly blackened; tarsi light brown, the outer ones dark brown. Wings with the brown pattern pale; seam on *Cu* narrow, ending at *m–cu*. Venation: *r–m* at fork of *Rs*, in alignment with R_{2+3}; cell R_4 short-petiolate.

Abdomen with tergites dark brown, the lateral borders yellow;

* Osten Sacken, C. R. Western Diptera. Bull. U. S. Geol. Survey, 3: 198; 1877. Record of my life work in Entomology, Part Third, pp. 215–218, 1904 (Heidelberg, Germany).

sternites dark brown, the lateral borders more broadly light gray, the posterior margins of the segments narrowly and abruptly yellow; hypopygium large, yellow. Male hypopygium with the tergal lobes narrowly separated, the tips broadly obtuse. Basistyle with outer apical angle produced into a short stout spine; no marked concentration of setae on face of style, as in *subobtusa*. Dististyle with the lower marginal spine from a strong basal tubercle; outer pegs or spines two or three in number, in a compact group.

Habitat. MONTANA. *Holotype:* ♂, Sacajawea Park, Lemhi Pass, 7,400 feet, June 26, 1956 (C. P. Alexander). *Paratopotypes:* 3♂♂.

Named in honor of Captain Meriwether Lewis (1774–1809), co-leader of America's most famous exploring expedition. The type locality of the present fly is at the highest source of the Missouri River at Lemhi Pass, about 100 feet below the small spring whence the river arises as a small branch of Pass Creek. At this point the river is scarcely more than a foot across, with small swampy areas on either bank, where the present flies and many other species of crane-flies occurred. Lewis and Clark remained at this locality for nearly two weeks in August 1805 while obtaining horses to enable them to continue westward to the Pacific. The note in Lewis's *Journal* under date of Monday, August 12th, 1805, reads: "At the distance of 4 miles further the road took us to the most distant fountain of the waters of the Mighty Missouri in surch of which we have spent so many toilsome days and wristless nights."—Original spelling retained.

In the structure of the male hypopygium, particularly the outer spine of the basistyle, the species is nearly intermediate between *Pedicia* (*Pedicia*) *parvicellula* Alexander on one hand and *P.* (*P.*) *subobtusa* Alexander on the other.

Paradelphomyia (Oxyrhiza) sierrensis new species

General coloration of thorax yellow; antennal flagellum dark brown; wings subhyaline, cell M_1 present; male hypopygium with the apex of basistyle produced into a subacute point, the

outer setae unmodified; outer dististyle narrowest before the slightly expanded apex; spines of the ventral fork very slender, pale.

♂. Length about 4–4.5 mm.; wing 4.8–5 mm.

♀. Length about 4.5 mm.; wing 5 mm.

Rostrum brownish yellow; palpi dark brown. Antennae 16-segmented, brownish black, scape paler; flagellar segments oval, the outer ones more elongate, with long verticils. Head brown.

Pronotum light brown, scutellum more yellowed. Mesonotal praescutum brownish yellow, in cases vaguely darker medially; posterior sclerites and pleura clear yellow, the surface nitidous. Halteres with stem pale, knob infuscated. Legs with the coxae and trochanters yellow; remainder of legs brownish yellow, the outer segments passing into brown. Wings subhyaline, prearcular and costal fields slightly more yellowed; veins brown. Sparse macrotrichia in outer ends of cells R_2 to M_4, inclusive. Venation: Veins R_3 and R_4 gently divergent outwardly; cell M_1 present, from one-third to one-half its petiole; *m–cu* beyond the fork of M.

Abdominal tergites brown, sternites obscure yellow, subterminal segments of male more darkened to form a ring; genitalia of both sexes yellow. Male hypopygium generally as in *pacifica,* differing in important details. Apex of basistyle produced into a subacute point, the outer setae elongate but slender. Outer dististyle narrowest at midlength or before the slightly expanded apex. Spines of the ventral fork very slender, pale.

Habitat. California. *Holotype:* ♂, Swale Camp, Kings Canyon National Park, about one mile south of the General Grant Big Tree, 6,400 feet, July 19, 1957 (C. P. Alexander). *Allotopotype:* ♀. *Paratopotypes:* several ♂♀. *Paratype:* 1♀, Sotcher Lake, Reds Meadow, Mammoth Lakes District, 7,600 feet, July 29, 1957 (C. P. Alexander).

Paradelphomyia (*Oxyrhiza*) *sierrensis* is most nearly related to *P.* (*O.*) *pacifica* (Alexander) of northwestern North America, differing most evidently in the structure of the male hypopygium, as described. The eastern Nearctic *P.* (*O.*) *americana* (Alexander) is nearly intermediate between the two western species in these characters.

Ormosia (Rhypholophus) arapaho new species

General coloration of head and thorax gray; antennae black throughout; legs brownish black to black; male hypopygium with the gonapophysis appearing as a simple black subtriangular structure, without branches; arms of aedeagus short.

♂. Length about 5.3–5.5 mm.; wing 5–5.5 mm.; antenna about 1.1–1.2 mm.

♀. Length about 6–6.2 mm.; wing 6–6.5 mm.

Rostrum dark gray; palpi black. Antennae black; flagellar segments oval. Head gray.

Pronotum dark gray. Mesonotal praescutum gray, with four brownish stripes, the intermediate pair separated by a line that is slightly narrower than either stripe; lateral stripes paler brown; pseudosutural foveae and tuberculate pits black, conspicuous; posterior sclerites of notum gray, the scutal lobes slightly patterned with darker near the midline. Pleura lighter gray; dorsopleural membrane dusky. Halteres whitened. Legs with the coxae gray; trochanters brownish yellow; remainder of legs brownish black to black. Wings whitish subhyaline; vein *Cu* in cell *M* vaguely seamed with darker; stigma brown; veins brown. Venation: Sc_1 ending opposite R_2, Sc_2 far removed; R_2 at fork of R_{2+3+4}; cell *1st* M_2 relatively small, the second section of vein M_{1+2} about one-half the outer section; *m–cu* about one-half its length beyond the fork of *M*; vein *2nd A* strongly sinuous on outer half. The female paratype has cell M_2 of one wing open by the atrophy of *m*.

Abdomen dark brown, gray pruinose; ninth segment of male and genital segment of female brightened. Ovipositor with cerci yellow, strongly upcurved to the acute tips. Male hypopygium with the tergite transverse, the sides rounded oval, with conspicuous setae, the broad central area without major vestiture but with a narrow transverse sclerotized bar. Outer dististyle rather broadly dilated outwardly, the margin blackened, outer apical angle more extended; inner style a flattened brownish yellow blade. Gonapophysis distinctive, appearing as a simple black subtriangular structure, narrowed outwardly to an acute point, without branches. Arms of the aedeagus relatively short, the tips gently upcurved.

Habitat. Colorado (Rocky Mountain National Park). *Holotype:* Trail Ridge Road, 11,300 feet, July 30, 1955 (C. P. Alexander). *Allotopotype:* ♀, pinned with type. *Paratypes:* 1 ♂, 1 ♀, Beaver Creek at Milner Pass, 10,730 feet, July 19, 1955 (C. P. Alexander).

The types were collected at timberline among low shrubby willows, swept from the latter, *Caltha, Cardamine, Senecio triangularis,* and other herbs. The small streamlets flow through gravel beds among the willow thickets, dropping rapidly and flowing into the Cache la Poudre River far below. The paratypes were found along Beaver Creek, near the ultimate source of the Colorado (Grand) River, where they were swept from the vegetation. The itinerary covering this part of field collecting in Colorado has been outlined elsewhere.*

The most similar described species is *Ormosia (Rhypholophus) bifidaria* (Alexander). The present fly differs conspicuously in the structure of the male hypopygium, particularly the simple compact gonapophyses which are quite distinct from all previously described species of the subgenus.

Molophilus (Molophilus) oligacanthus new species

Belongs to the *gracilis* group, *pubipennis* subgroup; general coloration dark brown; antennae short in both sexes; legs dark brown to blackened; wings broad, macrotrichia of veins dark; male hypopygium with tip of apical lobe of basistyle subacute; both dististyles with relatively sparse armature, the outer style without spinules on basal half; phallosomic plate broadly obtuse at apex, the surface with delicate setulae.

♂. Length about 4.5–4.6 mm.; wing 5.2–5.7 mm.; antenna about 1.1–1.2 mm.

♀. Length about 5–5.2 mm.; wing 5.8–6 mm.

Rostrum brown; palpi dark brown. Antennae relatively short, brown to brownish black; flagellar segments long-oval, the basal ones with very long verticils. Head light brown.

* Alexander, Charles P. Distribution of crane-flies in the state of Colorado. The American Philosophical Society Year Book 1955: 122–125; 1956.

Thorax varying from light to dark brown, the pleura more pruinose. Halteres yellow. Legs with the coxae and trochanters yellow; remainder of legs dark brown to blackish. Wings broad, subhyaline, the prearcular field more yellowed; veins pale brown, macrotrichia dark brown. Venation: R_2 lying distally to *r–m*; petiole of cell M_3 from one and one-half to two times *m–cu*; vein *2nd A* sinuous, ending some distance beyond the level of *m–cu*.

Abdomen dark brown, hypopygium more yellowed. Male hypopygium much as in *spiculatus*, differing in details. Apical lobe of basistyle moderately slender, tip subacute, the setae not including the apex. Both dististyles with relatively sparse armature; outer style without spinules on basal half, on outer part these restricted to the upper edge and ventral margin; inner style longer, strongly curved beyond midlength, as in *spiculatus;* spines relatively large but scattered and few in number, especially on the outer or convex side. Phallosomic plate broadly obtuse at apex, surface with delicate setulae.

Habitat. CALIFORNIA. *Holotype:* ♂, somewhat teneral, Coldwater Creek above Lake Mary, Mammoth Lakes District, Sierra Nevadas, 9,000 feet, July 6, 1957 (C. P. Alexander). *Allotopotype:* ♀, July 5, 1957. *Paratopotypes:* Several ♂♀, July 5–6, 1957.

The type series was taken in an extensive boggy area that included small cold sunken streamlets flowing into Coldwater Creek. The sparse tree cover included chiefly lodgepole pine and mountain hemlock; shrubs and herbs chiefly *Kalmia, Ledum* and *Phyllodoce,* with *Veratrum, Allium* and *Saxifraga,* growing amidst abundant short sedges and rushes and among dense mosses. Associated crane-flies included *Limonia* (*Limonia*) *venusta* (Bergroth), *Ornithodes brevirostris* Alexander, *Limnophila occidens* Alexander, *Gonomyia* (*Gonomyia*) *bihamata* Alexander, *Erioptera* (*Mesocyphona*) *melanderiana* Alexander, *Erioptera* (*Psiloconopa*) *rainieria* Alexander, and many others.

The most similar species is *Molophilus* (*Molophilus*) *spiculatus* Alexander, which is most readily separated by the details of structure of the male hypopygium, particularly the armature of the dististyles.